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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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02/07/2005

Kim Lui So

SO-2

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39705

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02/19/2009

LOREN G. HELMREICH
5851 San Felipe
SUITE 975
HOUSTON, TX 77057

EXAMINER

PRICE, CARL D

ART UNIT

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3749

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,309	Applicant(s) SO, KIM LUI	
	Examiner Carl D. Price	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/21/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 14, 16-26 and 40-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14, 16-26 and 40-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **12/23/2008** has been entered.

Response to Arguments

Applicant's arguments with respect to claims **1-10, 12, 14, 16-26 and 40-57** have been considered but are moot in view of the new ground(s) of rejection.

Applicant has amended the claims to be of a scope not previously considered. Consistent with applicant's argument that the prior art relied on in the previous office action fail to show, disclose and/or teach certain aspects of applicant's invention now recited in the claims filed on **03/21/2008** applicant has amended the claims to include at least the following:

1. (Currently Amended)

A self-cleaning kitchen exhaust system, comprising: a first filter in a path for an air flow, **the first filter having a first mesh size to capture contaminants**; a first spray outlet for providing a first spray into the air flow before the first filter to enable the first spray to be drawn along the path onto a first surface of the first filter; and a second filter in the path for the air flow downstream from the first filter, **the second filter having a first mesh size to capture contaminants**; wherein the first spray has droplets sized to combine with droplets of a contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter; and a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operative when cooking is taking place below the plate.

17. (Currently Amended)

A self-cleaning kitchen exhaust system including a first filter **having a first mesh size** for filtering contaminants from an air flow along an air flow path, a first spray outlet for providing a fine, first spray of a cleaning solution into the air flow before the first filter to enable the fine, first spray to be drawn into the first filter by the air flow, wherein the fine, first spray has droplets sized to combine with droplets of the contaminant to form combined droplets in the air flow before the first filter to assist the combined droplets being captured by the first filter, and a plate mounted below the first filter for collection

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of the fine, first spray such that the exhaust system is operable when cooking is taking place below the first plate.

19. (Currently Amended)

A method of removing at least one contaminant in a kitchen exhaust system, comprising: providing a first spray into an air flow before a first filter, the first filter being mounted in a path of the air flow to enable the first spray to be drawn along the path onto the first filter having a first mesh size; the first spray being able to combine with droplets of the contaminant in the air flow before the first filter; the first spray being able to coat the first filter to assist the first filter in capturing at least one droplet of the contaminant in the air; and a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate.

46. (Currently Amended)

A self-cleaning kitchen exhaust system, comprising: a first filter in a path for an air flow, the first filter having a first mesh size; a first spray outlet for providing a first spray into the air flow before the first filter to enable the first spray to be drawn toward the first filter; and a second filter in the path for the air flow downstream from the first filter; wherein the first spray has droplets sized to combine with a contaminant to form combined droplets in the air flow before the first filter, such that the combined droplets are captured by the first filter; a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operative when cooking is taking place below the plate; and a drain for draining fluid collected on the plate.

51. (Currently Amended)

A method of removing at least one contaminant in a kitchen exhaust system, comprising: providing a first spray into an air flow before a first filter, the first filter having a first mesh size mounting the first filter along a path of the air flow such that the first spray is drawn along the path of the air flow toward the first filter while combining with a contaminant to form combined droplets in the air flow before the first filter; mounting a plate below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operable when cooking is taking place below the first plate; and draining fluid collected on the plate.

55. (Currently Amended)

A self-cleaning kitchen exhaust system, comprising a first filter in a path for an air flow and inclined with respect to the path for the air flow, the first filter having a first mesh size; a first spray outlet for providing a first spray into the air flow before the first filter to enable the first spray to be drawn toward the first filter; a second spray outlet located in said air flow path after said first filter for providing a second cleaning spray onto a rear surface of said first filter; and a second filter in the path for the air flow downstream from

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the first filter, **the first filter having a first mesh size**; wherein the first spray has droplets sized to combine with a contaminant to form combined droplets in the air flow before the first filter, such that the combined droplets are captured by the first filter; and a plate mounted below the first filter for collection of the first spray such that the self-cleaning kitchen exhaust system is operative when cooking is taking place below the plate.

In response to the prior art of record cited in the previous examiner's action and in support of the scope of the invention now presented in the amended claims, applicant argues the following:

“...Each of the independent claims has been amended to recite that first filter and/or the second filter have a respective mesh size for capturing contaminants or for filtering contaminants from the air flow. This feature of Applicant's invention, as disclosed at page 5 commencing at line 21, clearly distinguishes over the baffle arrangement disclosed in U.S. Patent 3,616,744, and distinguishes a baffle from a filter, as discussed in the Affidavit. Dependent claim 5 has been amended to specify that the baffle depends from the top and intermediate front wall and rear wall for disrupting the air flow, as disclosed in the application. Dependent claim 12 has been amended, and recites that the first filter is inclined with respect to the path for the air flow, and substantially covers the path for the air flow.”

The Affidavit from the inventor, filed response to the June 26 Office Action, has been carefully reviewed.

In response to applicant's argument(s) and Affidavit directed to the prior art previously relied on, and in response to the scope of the invention now set forth in the presently amended claims, the following examiner's action now relies on the prior art reference of **US 5042456 (Cote)**.

Most notably, with regard to the now claimed invention, **US 5042456 (Cote)** shows and discloses that it is known to composed of two or more glass-fibre filters of *progressively finer* mesh size, for the purpose of removing contaminants such as “virtually all grease and a substantial portion of the smoke have-been removed from the airstream.” Furthermore, notwithstanding the teaching of **US 5042456 (Cote)**, it is believed that the filter (60, 90) pore sizes, or mesh size, **US003616744 (Jensen)** are necessarily sized to capture contaminant since contaminants such as grease are necessarily captured therein, at least in the manner only broadly

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set forth in applicant's amended claims. This is further supported by the teachings of **US 6293983 (More)** wherein successive filters are known to operate such that much of the incoming contaminants collide with and adhere to the outer fibres of the filter. The wool then characteristically "wicks" the collecting material along the fibres and into the core of the filter. This natural movement is encouraged by the flow of passing air.

Accordingly, while applicant's arguments have been carefully considered, applicant's claims do not patentably distinguish applicant's invention over the prior art of record.

The following examiner's action is now made in response to applicant's argument that the prior art of record fails to show and/or teach a self-cleaning kitchen exhaust hood as now set forth in applicant's amended and newly presented claims.

Claims rejected under 35 U.S.C. 103(a)

Claims 1, 2, 4-6, 12, 14, 19-23, 26, 40, 44, 45, 46-55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over **US 3616744 (Jensen)** in view of **US 5042456 (Cote)** or **US 6293983 (More)**.

US003616744 (Jensen) a continuous self-cleaning kitchen exhaust hood system wherein cooking exhaust air and fumes are drawn (see column 3, line 60) including:

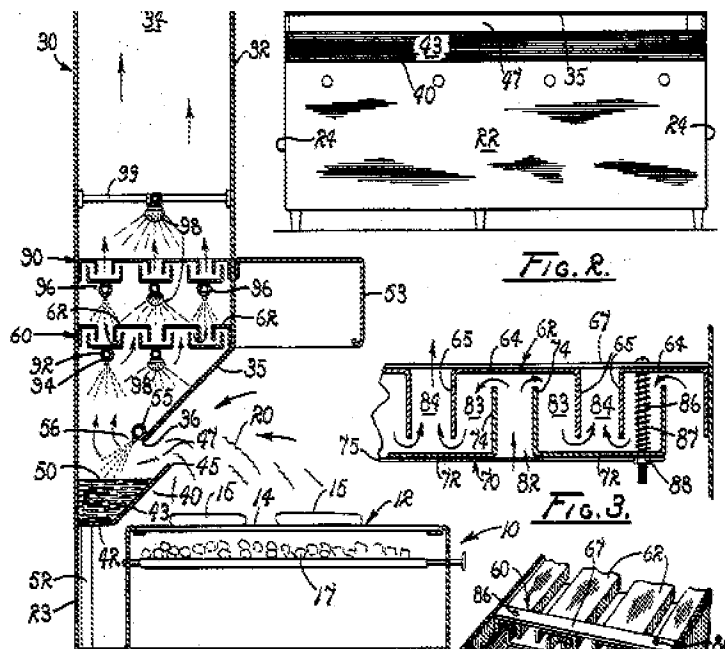
- a first filter (60) in a path for an air flow;
- a first spray outlet (56, 94) for providing a fine ("fogging nozzles") first spray into the air flow before the first filter which would inherently enable the first spray to be drawn along the path onto a first surface of the first filter;
- a second filter (90) in the path for the air flow;
- at least some of the droplets of the first spray are of a size inherently capable of combining with droplets of a contaminant carried by the air flow, whereby the combined droplets are captured by the first filter ("...some minute particles of the contaminants intimately entrained with the air steam which have become partially saturated with the water vapor from the first-stage fogging nozzles 56"); a second spray outlet (118) located in said air flow path after said first filter for providing a second cleaning spray onto a rear (top) surface of said first filter (106); and
- wherein the first and second filters are inclined (see column 5, lines 1-4);

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- a plate mounted (35 or 40) below the first filter for collection of the fine, first spray such that the exhaust system is operable when cooking is taking place below the first plate.

US 3616744 (Jensen) shows and discloses (see detailed discussion herein above) the invention substantially as set forth in the claims with possible exception to:

- filter mesh sizes to capture contaminants..



US 5042456 (Cote) teaches, from applicant's same filtration hood field of endeavor, a cross-section of the **first and second stage grease trapping filters** in a yet further embodiment. In this embodiment, primary filter 30 is of the baffle or mesh type known in the art. **Air is pulled through this filter** and towards the secondary stage filter 31. Secondary filter 31 operates by forcing the air stream to rapidly change directions several times. The heavier grease particles are thrown from the airstream by means of centrifugal force and land on the air direction plates of the secondary filter. **The grease then runs down the airstream plates** to a retaining dish 32 where it is removed during regularly scheduled cleaning. Thus, the **primary grease filters**

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provide a method of removing the bulk of the grease from the airstream in a non-disposable type filter. The airstream leaves the secondary filter 31 tangentially to its direction of entrance (i.e., vertical to the page) where it is drawn through tertiary 33 and quaternary 34 stage filters.

The tertiary stage filter 33 is composed of **two or more glass-fibre filters of progressively finer mesh size**. These may be similar to the type commonly used in home filtering systems. This unit, referred to herein as the ecologizer unit requires, replenishment at regular intervals, by disposing of the filters and installing new, clean filters. At this point, **virtually all grease and a substantial portion of the smoke have-been removed from the airstream.**

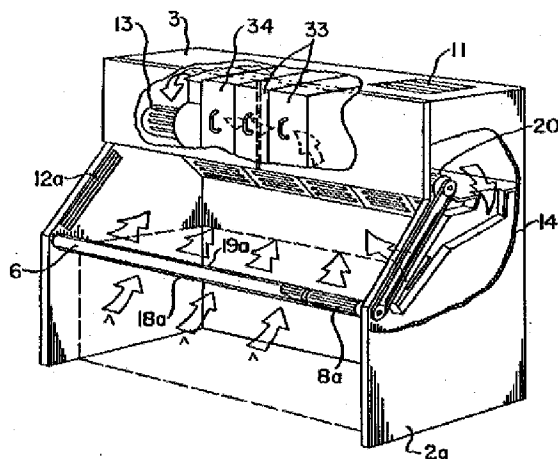
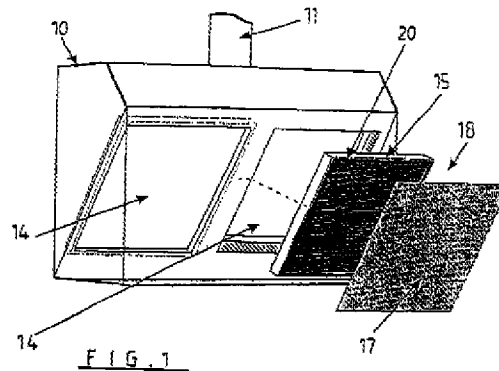


FIG. 3

US 6293983 (More) teaches, from applicant's same hood filter field of endeavor, and arrangement wherein contaminant grease vapors drawn through the pre-filter 17 will naturally adhere to the wool fibres upon contact due to wool's considerable affinity for grease and oil. The filter element is made to provide just the **appropriate mesh size** to remove virtually all the **airborne contaminants**, including moisture vapour, without noticeably affecting airflow. Much of the **incoming contaminants collide with and adhere to the outer fibres of the filter**. The wool then characteristically "wicks" the collecting material along the fibres and into the core of the filter. This natural movement is encouraged by the flow of passing air.

U.S. Patent Sep. 25, 2001 Sheet 1 of 4 US 6,293,983 B1



In regard to **claims 1, 2, 4-6, 12, 14, 19-23, 26, 40, 44, 45, 46-55 and 57**, for the purpose of aiding in removing contaminants, it would have been obvious to a person having ordinary skill in the art to modify the filter members of **US 3616744 (Jensen)** to include a mesh size capable of aiding in collecting contaminants, in view of the teaching **US 5042456 (Cote)** or **US 6293983 (More)**.

In regard to claim 5, **US003616744 (Jensen)** includes a top, a front wall (32, 53), a rear wall (23, 30) and side walls (34) extending between the rear wall and the front wall; and a baffle (35) depending from the top and intermediate the front wall and the rear wall.

In regard to claim 6, in **US003616744 (Jensen)** both the filters (60, 90) are mountable to one of the front wall and the rear wall, and the baffle extends between the front wall and the rear wall.

Claims rejected under 35 U.S.C. 103(a)

Claims 3, 16-18, 24, 42, 43 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over **US 3616744 (Jensen)** in view of **US 5042456 (Cote)** or **US 6293983 (More)**, as applied to claims 1, 17 and 55 above, and further in view of **US 3805685 (Carns)**.

US003616744 (Jensen) a continuous self-cleaning kitchen exhaust hood system wherein cooking exhaust air and fumes are drawn (see column 3, line 60) including:

- a first filter (60) in a path for an air flow;

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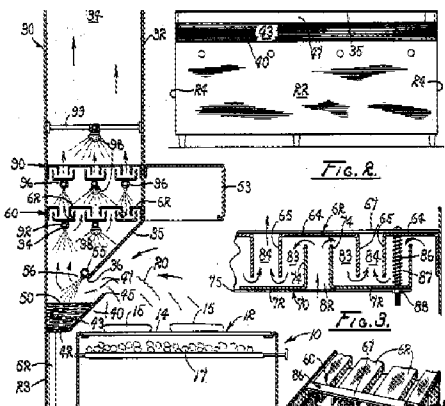
- a first spray outlet (56, 94) for providing a fine (“fogging nozzles”) first spray into the air flow before the first filter which would inherently enable the first spray to be drawn along the path onto a first surface of the first filter;
- a second filter (90) in the path for the air flow;
- at least some of the droplets of the first spray are of a size inherently capable of combining with droplets of a contaminant carried by the air flow, whereby the combined droplets are captured by the first filter (“...some minute particles of the contaminants intimately entrained with the air steam which have become partially saturated with the water vapor from the first-stage fogging nozzles 56”); a second spray outlet (118) located in said air flow path after said first filter for providing a second cleaning spray onto a rear (top) surface of said first filter (106); and
- wherein the first and second filters are inclined (see column 5, lines 1-4);
- a plate mounted (35 or 40) below the first filter for collection of the fine, first spray such that the exhaust system is operable when cooking is taking place below the first plate.

In regard to claim 5, **US003616744 (Jensen)** includes a top, a front wall (32, 53), a rear wall (23, 30) and side walls (34) extending between the rear wall and the front wall; and a baffle (35) depending from the top and intermediate the front wall and the rear wall.

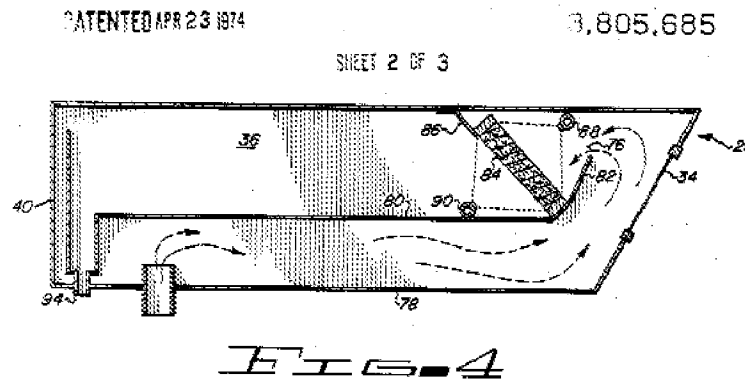
In regard to claim 6, in **US003616744 (Jensen)** both the filters (60, 90) are mountable to one of the front wall and the rear wall, and the baffle extends between the front wall and the rear wall.

US 3616744 (Jensen) shows and discloses (see detailed discussion herein above) the invention substantially as set forth in the claims with possible exception to:

- the second outlets providing a course spray.
- the cleaning fluid being that of a cleaning “solution”, such as a mixture of water and detergent.



US 3805685 (Carns) teaches, from applicant's same self-cleaning kitchen exhaust hood system field of endeavor, a cleaning fluid is that of a cleaning "solution" including a wetting agent (surfactant), such as a mixture of water and detergent.



In regard to claim **3** and **24**, since the characteristics of the first and second sprays for a given apparatus would necessarily depend on numerous design concerns such as properties and characteristics of the air flow (e.g. - volume of flow) and entrained contaminant (oily vapor, dust particle, etc.), to form the first sprayer to provide a fine spray and a second spray outlet for providing a coarse spray can be viewed as nothing more than merely matters of choice in design absent the showing of any new or unexpected results produced therefrom over the prior art of record.

In regard to claims **16-18**, **42**, **43** and **56**, for the purpose of providing wetting means to aid in the cleaning process, it would have been obvious to a person having ordinary skill in the art to operate the **US 3616744 (Jensen)** system with a cleaning solution having a ratio of water to wetting agent (degreaser) suitable and appropriate to achieve the intended purpose, in view of the teaching of **US 3805685 (Carns)**.

Claims rejected under 35 U.S.C. 103(a)

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **US 3616744 (Jensen)** in view of **US 5042456 (Cote)** or **US 6293983 (More)**, as applied to claims 1 above, and further in view of **EP 0 029 807**, **US 5359990 (Hsu)** or **US 3805685 (Carns)**.

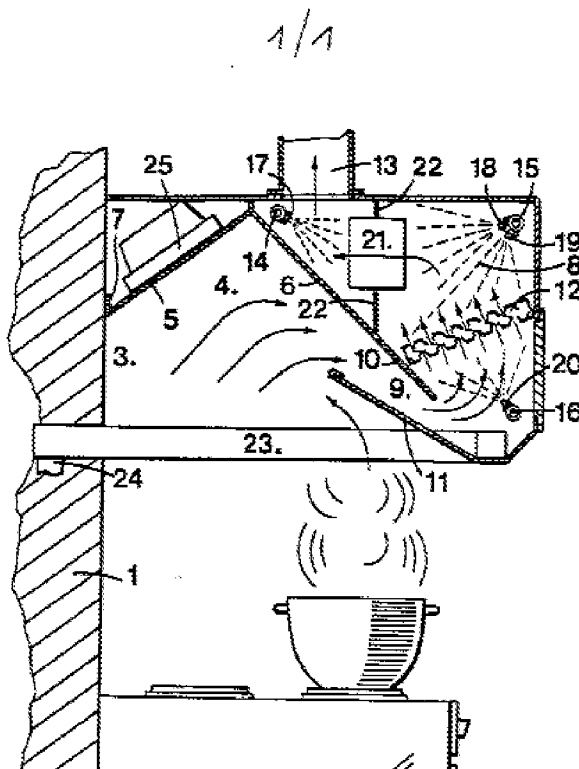
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US 3616744 (Jensen) shows and discloses (see detailed discussion herein above) the invention substantially as set forth in the claims with possible exception to:

- wherein the bottom plate (42) is arranged so as to:
 - extend forwardly from one of the front wall and the rear wall;
 - extend beyond the baffle (35);
 - has an upwardly directed projection extending between the baffle and the one of the front wall and the rear wall; and
 - wherein the projection extends upwardly to a height at least as high as the mounting of the first filter to the baffle; and
- wherein the spray outlet is mounted on the plate.

EP 0 029 807 from applicant's same self-cleaning kitchen exhaust hood system field of endeavor, arranging an exhaust hood bottom plate (generally 11 to extend from a front wall and to have an upwardly directed projection (11) extending between a baffle (6) and a rear wall, and wherein the projection (11) extends upwardly to a height at least as high as the mounting of an inclined filter (12).

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US 5359990 (Hsu) teaches, from applicant's same self-cleaning kitchen exhaust hood system field of endeavor, arranging an exhaust hood bottom plate (generally at 12) to extend forwardly from a rear wall (14) and beyond a baffle (13). The bottom plate has an upwardly directed projection (generally 15) extending between the baffle (13) and a front wall (generally 1), and wherein the projection extends upwardly to a height at least as high as the mounting of a first filter (32) to the baffle.

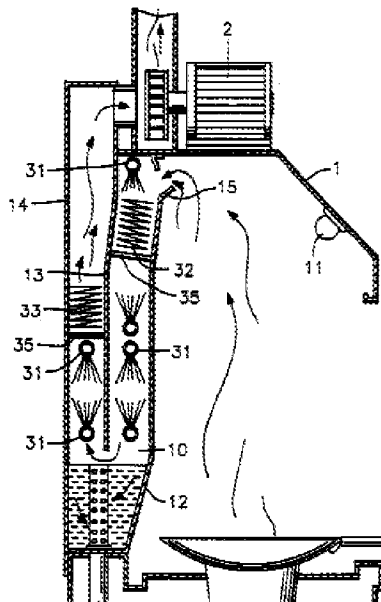
U.S. Patent

Nov. 1, 1994

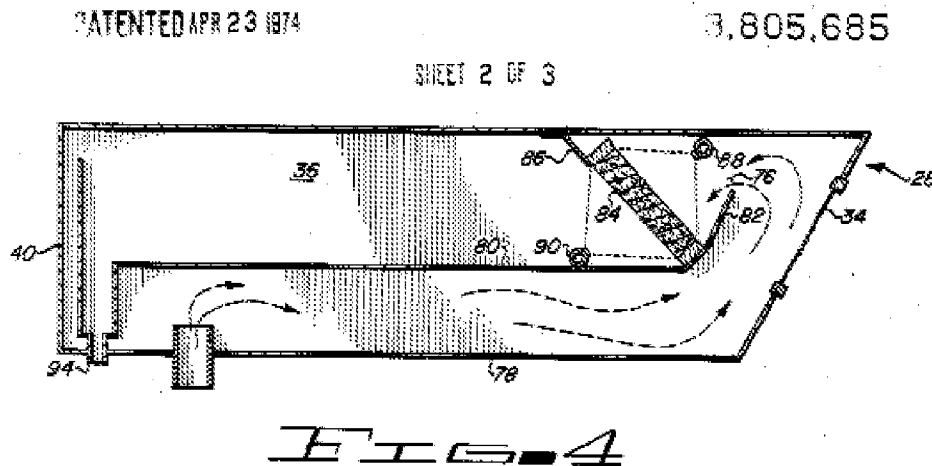
Sheet 2 of 3

5,359,990

FIG. 2



US 3805685 (Carns) teaches (figure 4) from applicant's same self-cleaning kitchen exhaust hood system field of endeavor, arranging an exhaust hood bottom plate (80) to extend from a rear wall and to have an upwardly directed projection (82) extending between a baffle (86) and a front wall (28), and wherein the projection (82) extends upwardly to a height at least as high as the mounting of an inclined filter (84). **US 3805685 (Carns)** uses the bottom wall to mount a sprayer (90).



In regard to **claim 7**, for the purpose of providing a suitable alternative hood construction and for aiding in isolating the water spray treatment zone from the any cooking surface, it would have been obvious to a person having ordinary skill in the art to modify the bottom plate of **US003616744 (Jensen)** to extend forwardly from one of the front wall and the rear wall and beyond the baffle, in view of the teaching of **EP 0 029 807**, **US 5359990 (Hsu)** or **US 3805685 (Carns)**.

In regard to **claim 8**, for the purpose of providing a suitable alternative hood construction and for aiding in isolating the water spray treatment zone from the any cooking surface, it would have been obvious to a person having ordinary skill in the art to modify the bottom plate of **US003616744 (Jensen)** such that the plate has an upwardly directed projection extending between the baffle and the one of the front wall and the rear wall, in view of the teaching of **EP 0 029 807** or **US 5359990 (Hsu)**.

In regard to **claim 9**, for the purpose of providing a suitable alternative hood construction and for aiding in isolating the water spray treatment zone from the any cooking surface, it would have been obvious to a person having ordinary skill in the art to modify the bottom plate of **US003616744 (Jensen)** such that the projection extends upwardly to a height at least as high as the mounting of the first filter to the baffle, in view of the teachings of **EP 0 029 807**, **US 5359990 (Hsu)** or **US 3805685 (Carns)**.

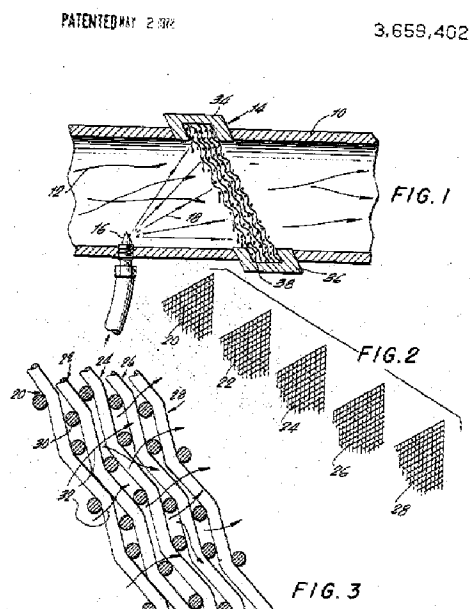
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In regard to **claim 10**, for the purpose of providing a suitable alternative hood construction and suitable support means for a spray nozzle, it would have been obvious to a person having ordinary skill in the art to modify the bottom plate of **US003616744 (Jensen)** such that a spray outlet is mounted on the plate, in view of the teaching of **US 3805685 (Carns)**.

Conclusion

See the attached USPTO for, 892 for prior art made of record and not relied upon which is considered pertinent to applicant's disclosure.

US 3659402



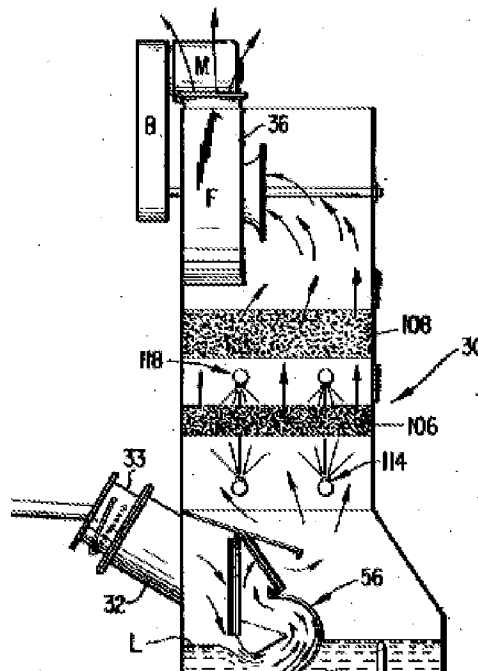
(18) In the present invention, a screen network comprising several tightly bound screens which in one embodiment may decrease in mesh sizes in the direction of movement of the gases to be cleaned. **Water is directed onto the screens** from a position in advance of the screen network so that the **water is sprayed** on and between the screen surfaces substantially filling the entire network as a continuous sheet with no voids. As the dirty gases impinge upon the screen network, the dirty gases are thoroughly mixed with the water in the countless paths thus formed. **All contaminant particles become completely wetted** and **the water carrying the trapped pollutants may then be disposed of while the clean air continues through the screen network and out of the apparatus.** The **larger mesh screens** in the network aid in **eliminating large soot particles**, so that by the time the gas reaches the **finer mesh screens**, their smaller openings **cannot be clogged**. Furthermore, the flow of the water from a location in advance of

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the screen network causes the water and gases to enter the screen network together and thus mix better while preventing clogging of the larger mesh screens as well.

(33) Scrubber pad 106 extends across the entire cross-sectional flow area of upper section 46 and is formed by upper and lower perforated polypropylene support grates 110 and 112, and an intermediate filter bed 113 of micro reticulated polyester fibrous pellets packed between the grates. The pellets preferably are of the type known as E-PACK and are sold by the Beco Engineering Co.

US 3885929



(34) A lower fresh water spray assembly 114 (FIGS. 8 and 9) is mounted in section 46 beneath pad 106 and includes suitable piping and a plurality of atomizing nozzles 116 which direct a continuous pressurized spray of fresh water upwardly against the bottom of pad 106.

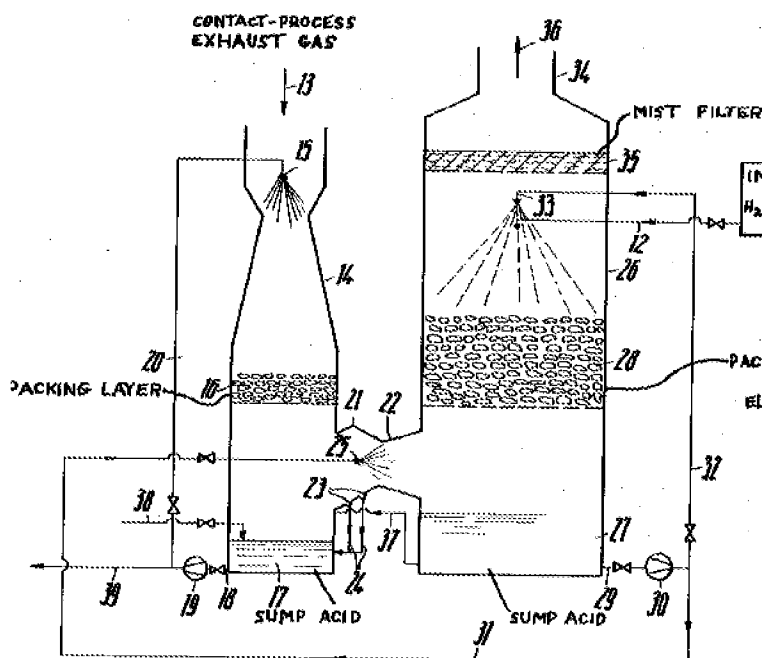
(35) Similarly, an upper fresh water spray assembly 118 (FIGS. 10 and 11) is mounted in section 46 above pad 106 and includes suitable piping and a plurality of atomizing nozzles 120 which direct a continuous pressurized spray of water downwardly against the top of pad 106.

(36) As a result of spray assemblies 114 and 118, the pellets in pad 106 are highly wetted and the pad acts as a final transfer or separation stage for any contaminants remaining in the air. The water from assemblies 114 and 118 continuously washes pad 106, keeping it clean and effective as a final filtering and separating stage.

(37) Demister pad 108 removes the water from the air stream before it enters the housing of fan 36 and is exhausted to the atmosphere. Similar to scrubber pad 106, demister pad 108 is formed by upper and lower perforated polypropylene support grates 122 and 124, and an intermediate

filter bed 126 of micro reticulated polyester fibrous pellets which collect the water as the air passes therethrough.

US 3944401:



(8) The gas outlet 34 is preceded by a wire mesh filter 35, in which residual acid is separated from the gas and drips onto the packing layer 28. The purified gas 36 is discharged into the atmosphere. Scrubbing acid from the sump 27 is transferred over the overflow 37 into the sump 17. The scrubbing acid flows over at a rate which corresponds to the rate at which electrolyte acid containing active oxygen is supplied to the tower plus the rate at which sulfuric acid is produced by oxidation in the tower 26 and the venturi tube 22. Water is supplied through conduit 38 into the sump 17 of the venturi tube 14. The rate is controlled so that a steady-state concentration of sulfuric acid in the sump 17 remains constant. Scrubbing acid which contains the oxidation product is withdrawn through conduit 39. The rate is controlled so that the level in the sump 17 remains constant. The withdrawn acid is supplied to the final absorber of the contact process plant where the residual active oxygen is utilized for oxidation.

USPTO CUSTOMER CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl D. Price whose telephone number is (571) 272-4880. The examiner can normally be reached on Monday through Friday between 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Carl D. Price/

Primary Examiner, Art Unit 3749

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